Nuclear and Particle Physics Directorate
Strategic Planning Retreat
Electron Ion Collider – The Path Forward

Jim Yeck

June 9, 2017

70 YEARS OF DISCOVERY
A CENTURY OF SERVICE

U.S. DEPARTMENT OF ENERGY
BROOKHAVEN NATIONAL LABORATORY

Successful project ingredients

- ✓ Facility is a priority of the science community!
  - ✓ Strong funding agency commitments and host role
    - ✓ Project leaders viewed as enabling success of others
      - ✓ Establish realistic goals – "Experience over hope"
        - ✓ Credibility through openness and transparency
          - ✓ Collective ownership of problems and solutions
            - ✓ Populate organization with critical experience
              - ✓ Success requires energy and enthusiasm!

Project leaders who prioritize on schedule performance and exhibit behaviour that is consistent with a "project culture" are likely to be successful!

Electron Ion Collider – The Path Forward

Current Status

- Priority in the NSAC Long Range Plan
- National Academy study well underway
- Continuing to develop a compelling case that is broadly understood and embraced
- BNL providing strong leadership in the nuclear physics community
- Recognized as BNL's highest future priority

Electron Ion Collider – The Path Forward

Current EIC Activities

- Supporting the NAS study
- Community building and EIC R&D
- eRHIC Machine Design
- eRHIC Experiment Planning
- Preparing sPHENIX for CD-1
- EIC Coordination Meetings (DO) – Bi-Weekly
- eRHIC Program Steering Group – Monthly
- Increasing lab-wide engagement and support

Electron Ion Collider – The Path Forward

Internal Strengths

- Lab's outstanding technical diversity, competency and capacity
- Building on the foundation of a successful RHIC program
- ~$1B of existing EIC related infrastructure

Internal Weakness

- Lab's bureaucratic growth – risk averse with process emphasized over outcomes
- Attitudes of entitlement, arrogance and complacency

Electron Ion Collider – The Path Forward

External Threats

- J-Lab competition is a lose-lose proposition
- Federal budgets – uncertainty in future projections and the actual budgets enacted

External Opportunities

- Collaboration with J-Lab, and others
- SBU/BNL EIC Center
- NYS and Federal reps' interest and support
- International collaboration

Electron Ion Collider – The Path Forward

Goals

- EIC case broadly understood and embraced
- EIC collaboration opportunities emphasized over competition
- eRHIC machine design with acceptable technical risks
- A realistic plan for the staged implementation of eRHIC recognizing funding and budget forecast realities

Major Near Term Milestones

• National Academy Panel Report	Spring 2018
• eRHIC Pre-Conceptual Design Review	April 2018
• Anticipated CD-0 (Mission Need)	Late 2018

Electron Ion Collider – The Path Forward

Key Concerns/Issues

- Evolution - eRHIC should be recognized as an evolution of the successful RHIC program and the best value for achieving EIC scientific goals (versus a new $1B project)
- Project Culture – Need to start developing and encouraging the type of project culture that will be required for successful project delivery
- Uncertainty - a threat that can stifel progress